

WHAT IS CLAIMED IS:

1. A method for paper material discrimination, comprising the steps of:

irradiating two kinds of lights in near-infrared ranges of different wavelengths onto paper as a measurement target;

obtaining absorbances of the paper to which said two kinds of lights have been irradiated, respectively;

calculating an absorbance difference from said obtained absorbances; and

discriminating a paper material of the paper from said calculated absorbance difference on the basis of information in which paper materials of paper and absorbance differences of said paper materials have been made to correspond to each other and which has been stored in memory means.

2. A method according to claim 1, wherein said near-infrared ranges denote two kinds of lights whose wavelengths lie within a range between 800 nm and 2200 nm.

3. A method according to claim 1, wherein the wavelengths of said two kinds of lights exist within ranges of  $\pm 30$  nm around 1480 nm and 2100 nm as centers, respectively.

4. A method according to claim 1, wherein reflected lights corresponding to the irradiation of said two kinds of lights are measured and said

absorbances are obtained, respectively.

5. A method according to claim 1, wherein transmitted lights corresponding to the irradiation of said two kinds of lights are measured and said absorbances are obtained, respectively.

6. A method according to claim 1, wherein an absorbance ratio is used in place of said absorbance difference.

7. A method according to claim 1, further comprising the steps of:

irradiating a light of a third kind onto said measurement target paper;

obtaining an absorbance of said third kind of light;

correcting an absorbance of the reflected light of said third kind of light; and

discriminating the paper material of the paper from said calculated absorbance difference and said corrected absorbance.

8. A method according to claim 7, wherein a center of a wavelength of said third kind of light exists in a range between 900 nm and 1000 nm.

9. An apparatus for paper material discrimination, comprising:

a light emitting unit for irradiating two kinds of lights in near-infrared ranges of different wavelengths onto paper as a measurement target;

a photosensing unit for receiving lights

necessary for obtaining absorbances of the paper to which said two kinds of lights have been irradiated; and

a control unit for calculating an absorbance difference of said two kinds of lights from the lights received by said photosensing unit and discriminating a paper material of the paper from said calculated absorbance difference on the basis of information in which paper materials of paper and absorbance differences of said paper materials have been made to correspond to each other and which has been stored in memory means.

10. An apparatus according to claim 9, wherein said near-infrared ranges denote two kinds of lights whose wavelengths lie within a range between 800 nm and 2200 nm.

11. An apparatus according to claim 9, wherein the wavelengths of said two kinds of lights exist within ranges of  $\pm 30$  nm around 1480 nm and 2100 nm as centers, respectively.

12. An apparatus according to claim 9, wherein said photosensing unit receives reflected lights corresponding to the irradiation of said two kinds of lights, respectively, and said control unit obtains said absorbances from said reflected lights.

13. An apparatus according to claim 9, wherein said photosensing unit receives transmitted lights corresponding to the irradiation of said two kinds of

lights, respectively, and said control unit obtains said absorbances from said transmitted lights.

14. An apparatus according to claim 9, wherein said control unit uses an absorbance ratio in place of said absorbance difference.

15. An apparatus according to claim 9, wherein:  
said light emitting unit further irradiates a light of a third kind onto said measurement target paper; and

said control unit obtains an absorbance of said third kind of light, corrects said absorbance of said third kind of light, and discriminates a paper material of the paper from said calculated absorbance difference and said corrected absorbance.

16. An apparatus according to claim 15, wherein a center of a wavelength of said third kind of light exists in a range between 900 nm and 1000 nm.

17. An apparatus according to claim 9, wherein said paper is a bill.

18. An apparatus for paper material discrimination, comprising:

a conveying mechanism for conveying a bill;  
a measuring mechanism for measuring physical amounts necessary for a first absorbance regarding a first wavelength having a wavelength width around 1480 nm as a center and a second absorbance regarding a second wavelength having a wavelength width around 2100 nm as a center with respect to the bill conveyed by

said conveying mechanism;

a storing unit for storing information in which paper materials of bills to be discriminated and a difference between said first and second absorbances have been made to correspond to each other; and

a control unit for obtaining the difference between said first and second absorbances from said physical amounts measured by said measuring mechanism and discriminating authenticity of said bill from said information stored in said storing unit.

19. An apparatus according to claim 18, wherein said measuring mechanism measures reflected lights from said bill with respect to said first and second wavelengths.

20. An apparatus according to claim 18, wherein said measuring mechanism measures transmitted lights from said bill with respect to said first and second wavelengths, and said control unit calculates the absorbances regarding said first and second wavelengths from said transmitted lights.

21. An apparatus according to claim 18, wherein a conveying speed of said conveying mechanism is equal to 500 sheets per second.